

CLAIMS

What is claimed is:

- 1. A composition comprising a sperm cell medium for mammalian, avian, or piscian sperm cells, wherein the medium comprises at least one growth factor selected from the group consisting of insulin-like growth factors and transforming growth factors.
- 2. The composition of claim 1, wherein the cells are mammalian cells.
- 3. The composition of claim 2, wherein the cells are porcine cells.
- 4. The composition of claim 2, wherein the cells are equine cells.
- 5. The composition of claim 2, wherein the cells are bovine cells.
- 6. The composition of claim 2, wherein the cells are ovine cells.
- 7. The composition of claim 2, wherein the cells are human cells.
- 8. The composition of claim 1, wherein the cells are avian cells.
- 9. The composition of claim 1, wherein the cells are piscian cells.
- 10. The composition of claim 1, wherein the medium comprises transforming growth factor.
- 11. The composition of claim 10, wherein the transforming growth factor comprises TGFβ-1.
- 12. The composition of claim 10, wherein the transforming growth factor comprises TGFβ-2.
- 13. The composition of claim 10, wherein the transforming growth factor comprises TGF β -1 and TGF β -2.
- 14. The composition of claim 1, wherein the medium comprises insulin-like growth factor.



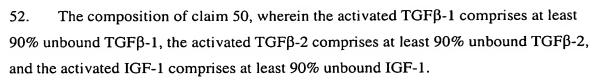
- 15. The composition of claim 14, wherein the insulin-like growth factor comprises IGF-1.
- 16. The composition of claim 10, wherein the medium further comprises insulin-like growth factor.
- 17. The composition of claim 13, wherein the medium further comprises IGF-1.
- 18. The composition of claim 1, wherein the medium further comprises at least one component selected from the group consisting of inositol, transferrin, and fructose.
- 19. A composition comprising a reproductive cell medium for mammalian, avian, or piscian reproductive cells, wherein the medium comprises zinc.
- 20. The composition of claim 19, wherein the medium further comprises at least one growth factor selected from the group consisting of insulin-like growth factors and transforming growth factors.
- 21. The composition of claim 19, wherein the medium is in liquid form and the zinc is present in a concentration from about 0.1 mg/L to about 300 mg/L.
- 22. The composition of claim 19, wherein the medium further comprises a component selected from the group consisting of inositol, transferrin, and fructose.
- 23. The composition of claim 11, wherein the medium is in liquid form and the TGF β -1 is present in a concentration from about 0.1 ng/L to about 10 μ g/L.
- 24. The composition of claim 23, wherein the TGF β -1 is present in a concentration from about 20 ng/L to about 400 ng/L.
- 25. The composition of claim 24, wherein the TGF β -1 is present in a concentration from about 50 ng/L to about 150 ng/L.
- 26. The composition of claim 12, wherein the medium is in liquid form and the TGFβ-2 is present in a concentration from about 0.1 ng/L to about 200 ng/L.
- 27. The composition of claim 26, wherein the TGF β -2 is present in a concentration from about 0.4 ng/L to about 16 ng/L.



- 28. The composition of claim 26 wherein the TGF β -2 is present in a concentration from about 1.8 ng/L to about 3.8 ng/L
- 29. The composition of claim 14, wherein the medium is in liquid form and the IGF-1 is present in a concentration from about 0.1 ng/L to about 30 μ g/L.
- 30. The composition of claim 29 wherein the IGF-1 is present in a concentration from about 40 ng/L to about 640 ng/L.
- 31. The composition of claim 29; wherein the IGF-1 is present in a concentration from about 200 ng/L to about 450 ng/L.
- 32. The composition of claim 1, wherein the medium further comprises a cryopreservative.
- 33. A composition comprising a sperm cell medium for mammalian, avian, or piscian sperm cells, wherein the medium comprises transferrin.
- 34. A composition comprising a reproductive cell medium for mammalian, avian, or piscian reproductive cells, wherein the medium comprises a growth factor selected from the group consisting of activated TGF β -1, activated TGF β -2, and activated IGF-1.
- 35. The composition of claim 34, wherein the medium comprises activated TGF β -1.
- 36. The composition of claim 35, wherein the activated TGF β -1 comprises at least about 75% unbound TGF β -1.
- 37. The composition of claim 35, wherein the activated TGF β -1 comprises at least about 90% unbound TGF β -1.
- 38. The composition of claim 34, wherein the medium comprises activated TGF β -2.
- 39. The composition of claim 38, wherein the activated TGF β -2 comprises at least about 75% unbound TGF β -2.
- 40. The composition of claim 38, wherein the activated TGF β -2 comprises at least about 90% unbound TGF β -2.



- 41. The composition of claim 34, wherein the medium comprises activated TGF β -1 and activated TGF β -2.
- 42. The composition of claim 41, where the activated TGF β -1 comprises at least about 75% unbound TGF β -1 and the activated TGF β -2 comprises at least about 75% unbound TGF β -2.
- 43. The composition of claim 41, where the activated TGF β -1 comprises at least about 90% unbound TGF β -1 and the activated TGF β -2 comprises at least about 90% unbound TGF β -2.
- 44. The composition of claim 34, wherein the medium comprises activated IGF-1.
- 45. The composition of claim 44, where the activated IGF-1 comprises at least about 75% unbound IGF-1.
- 46. The composition of claim 44, where the activated IGF-1 comprises at least about 90% unbound IGF-1.
- 47. A composition comprising a reproductive cell medium for mammalian, avian, or piscian reproductive cells, wherein the medium comprises inositol, and wherein the inositol is present in a concentration of from about 1 mg/L to about 1 g/L.
- 48. The composition of claim 1, wherein the medium further comprises zinc.
- 49. A composition comprising a sperm cell medium for porcine sperm cells, wherein the medium comprises $TGF\beta-1$, $TGF\beta-2$, and IGF-1
- 50. A composition comprising sperm cell medium for porcine sperm cells, wherein the medium comprises activated TGF β -1, activated TGF β -2, and activated IGF-1.
- 51. The composition of claim 50, where the activated TGF β -1 comprises at least 75% unbound TGF β -1, the activated TGF β -2 comprises at least 75% unbound TGF β -2, and the activated IGF-1 comprises at least 75% unbound IGF-1.



53. A method for collecting, holding, processing, sexing, culturing, storing or in vitro fertilization mammalian, avian or piscian sperm cells, comprising contacting the sperm cells with the composition of claim 1.